奥蓝德钢管
ALLLAND STEEL PIPE

ASTM A53

- ALLLAND Production Standards Overview

Definition and Applications

1. Definition

ASTM A53 is a general specification covering black and hot-dip galvanized, welded and seamless carbon steel pipes. The main steel grades include Grade A and Grade B.

2. ALLLAND ASTM A53 Steel Pipe Dimensions

Parameters	Dimensions
O.D.	10.3 mm – 660.4 mm（1/8" – 26"）
WT	1.53 mm – 50 mm（Sch 10 – Sch 160）
Length	5.8 m – 14 m（19' – 46'）
Material	ASTM A53 Grade A / B
Process	Seamless/ ERW with optional galvanization
Connection	Butt-weld/ Socket-weld/ Threaded

3. Application

ASTM A53 is applicable to mechanical processing, pressure pipeline systems, and common pipelines for the transportation of steam, water, gas and air. It can be welded and is also suitable for processing such as curling, bending and flange forming.

Critical Tolerances

Our ASTM A53 standard steel pipes are manufactured in strict compliance with the specification requirements.

Item	Tolerance	Description
O.D.	±0.5mm	O.D. ≤ 60.3mm
	±0.75% / ±1.0%	O.D. > 60.3mm
WT (SEAMLESS)	+15% / -12.5%	WT < 20mm, O.D. ≤ 73.0mm
	+17.5% / -10%	WT ≥ 20mm, O.D. > 73.0mm
WT (ERW / SSAW / LSAW)	+15.0% / -10%	WT > 5.0mm
	+15.0% / -0.6mm	WT ≤ 5.0mm

Chemical and Mechanical Properties

1. Chemical Composition (wt%, max)

Element	Composition, %	
	Grade A	Grade B
C, max	0.25	0.30
Mn	0.95	1.20 / 1.06
P, max	0.05	0.050 / 0.035
S, max	0.045	0.045 / 0.035
Si	…	≥0.10
Ni, max	…	0.40
Cr, max	…	0.40
Cu, max	…	0.40
V, max	…	0.08
Mo, max	…	0.15

2. Mechanical Properties

Grade		Tensile Strength, min	Yield Strength, min
Grade A	psi	55000	30000
	MPa	330	205
Grade B	psi	60000	35000
	MPa	415	240

Dimension Specifications Table

Outside demension			Wall thickness （mm）					
Size	Inch	OD	SCH10	SCH40	SCH80	SCH160	STD	XXS
DN6	1/8"	10.3	-	1.73	2.42	-	1.73	-
DN8	1/4"	13.7	-	2.24	3.02	-	2.24	-

DN10	3/8"	17.1	-	2.31	3.2	-	2.31	-
DN15	1/2"	21.3	-	2.77	3.73	4.78	2.77	7.47
DN20	3/4"	26.7	-	2.87	3.91	5.56	2.87	7.82
DN25	1"	33.4	-	3.38	4.55	6.35	3.38	9.09
DN32	1 1/4"	42.2	-	3.56	4.85	6.35	3.58	9.7
DN40	1 1/2"	48.3	-	3.68	5.05	7.14	3.68	10.15
DN50	2"	60.3	-	3.91	5.54	8.74	3.91	11.07
DN65	2 1/2"	73	-	5.16	7.01	9.53	5.16	14.02
DN80	3"	88.9	-	5.49	7.62	11.13	5.49	15.24
DN90	3 1/2"	101.6	-	5.74	8.08	-	5.74	-
DN100	4"	114.3	-	6.02	8.58	13.49	6.02	17.12
DN125	5"	141.3	-	6.55	9.53	15.88	6.55	18.05
DN150	6"	168.3	-	7.11	10.97	18.26	7.11	21.95
DN200	8"	219.1	-	8.18	12.7	23.01	8.18	22.23
DN250	10"	273.1	-	9.27	15.09	28.58	9.27	25.4
DN300	12"	323.9	-	10.31	17.48	33.32	9.53	25.4
DN350	14"	355.5	6.35	11.13	19.05	35.71	9.53	-
DN400	16"	406.4	6.35	12.7	21.44	40.49	9.53	-
DN450	18"	457.2	6.35	14.27	23.83	45.24	9.53	-
DN500	20"	508	6.35	15.09	26.19	50.01	9.53	-
DN550	22"	558.8	6.35	-	28.58	53.98	9.53	-
DN600	24"	609.6	6.35	17.48	30.96	59.54	9.53	-
DN650	26"	660.4	7.92	-	-	-	9.53	-

Testing Requirements

1. Destructive Tests

- Flattening Test: Smooth (Type S):
  - Smooth (Type S): Two-Step Flattening — first, partial flattening (H → contact with the wall)
  - Seam Welded (E/F) Three-step flattening (2/3D→ 1/3D→Wall contact)
- Bend Test:OD ≤60.3 mm: 90 degree bend with 12D hob bendmask (12D mandrel) Pipe in coil: Mobility of 180° bend on 8D mandrel
  - OD ≤60.3 mm: 90 degree bend with 12D hob bendmask (12D mandrel)
  - Pipe in coil: Mobility of 180° bend on 8D mandrel

2. Tensile Test

- Determines:Tensile strength,Yield strength,Elongation.
- Test specimens:Transverse or longitudinal samples taken from the pipe body.

3. Hydrostatic Test

- Pressure: ≥1.5 × design pressure (max 90% SMYS)
- Duration: ≥10 secondss:
  - Minimum absorbed energy values
  - Lateral expansion may also be specified

Surface treatment

Method: Oil Coating, Black Coating, Clear Coating, FBE, 3LBE, 3LPP.

ALLLAND ASTM A53 Product Images

The image shows steel pipes actually produced by our company